

The Syntactic Structure of Chinese Formal Focus*

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0. Introduction

Focus may be understood as having pragmatic functions (Dik 1980) or discourse functions (Halliday 1967). However, recent studies show that, like Topicalization, it also displays some syntactic properties. For instance, various focus movements have been discussed in Korean (Choe 1992), Standard Arabic (Ouhalla 1992), Hungarian (Brody 1991), Modern Greek (Tsimpli 1992) and some Western Romance languages (Uriagereka 1992), among others. It has been proposed that these focus movements involve various sorts of syntactic categories. But basically they display either head movement properties (an X^0 moves to morphologically support the focus head) or wh-movement (an X^{max} category moves to [Spec, FP] to satisfy Spec-Head Agreement requirement). In this paper I will investigate focus structures in Chinese. I will show that Chinese evidences a convincing case for focus movement triggered by the Focus Criterion, which is a specific case of Spec-Head Agreement outlined in Brody 1991 and Chomsky 1992.

The paper is organized as follows. In Section 1, I discuss various focus phenomena in Chinese, with a special interest on formal focus. I argue that there are (at least) two lexical entries for *dou*, and one of them must be treated as a focalizer signaling that the phrase preceeding it is in a focused position. In section 2, I show that formal focus in Chinese involves syntactic movement and this movement is triggered by the Focus Criterion. Section 3 is devoted to Focus Phrase and its positions in Chinese sentential structure. It is argued that Focus Phrase (FP) is a level of verbal projections and is

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optionally selected by Agr. I discuss the interactions of Topicalization, Wh-movement, and Focus movement in Sections 4 and 5. In the conclusion, I consider some theoretical consequences of the case study of the formal focus structures in Chinese.

1. Focus in Chinese

1.1. Two Kinds of Foci¹

Like some other languages (Korean (Choe 1992), English (Culicover 1992), Arabic (Ouhalla 1992), etc.), Chinese also displays two kinds of focus constructions: Focus in situ as is shown in (1) and formal focus as in (2).²

- (1) a. **Zhāngsān** *chī-le* *yī-ge* **píngguǒ**.
Zhangsan eat-PER one-CL apple
'It is **Zhangsan** who has eaten an apple.'
- b. **Zhāngsān** *chī-le* *yī-ge* **píngguǒ**.
Zhangsan eat-PER one-CL apple
'Zhangsan has eaten an **apple**, (not a banana).'
- c. **Zhāngsān** *chī-le* *yī-ge* **píngguǒ**.
Zhangsan eat-PER one-CL apple
'Zhangsan has eaten **one** apple, (not two).'
- d. **Zhāngsān** *chī-le* *yī-ge* **píngguǒ**.
Zhangsan eat-PER one-CL apple
'Zhangsan has **eaten** an apple, (not cut one).'
- (2) **Mǎlǐ lián píngguǒ dōu chī**.
Mary even apple FOC eat
'Mary eats even **apples**.'

As the translations show, in-situ focus gives contrastive information. The focused expression usually bears sentential stress and remains in its base-generated position. Virtually any element in a sentence can be stressed and thus contrasted. In (1) the stressed elements are shown to be the subject in (1a), the object in (1b), the classifier phrases in

¹ Other possible candidates for focus structures are the *bǎ*-construction and the *shì...de* construction. In the *bǎ*-construction, *bǎ* is usually followed by NP's. Thus *bǎ*-phrases are discussed in the literature either as secondary topic (Tsao 1987 and Gao 1991) or as fronted objects (Thompson 1973, Li and Thompson 1981, and Huang 1982). However, Gao 1992 has strongly argued for a prepositional analysis of *bǎ*, which is base-generated in a preverbal position. As for the *shì...de* construction, Gao 1989 has some arguments for it to be treated as an emphatic structure, as is shown in (i)

(i) **Zhāngsān shì cóng zhōngguó lái** *de*
Zhangsan SHI from China come DE
'Zhangsan is from China.'

In (i) we generally do not get a contrastive reading. Instead, it is either a confirmation of a previous statement (with the stress on *shì*) or simply a new piece of information (with the stress on *cóng zhōngguó*).

Since in these constructions, neither the NP after *bǎ* nor the phrase after *shì* must have the sentential stress and none of them necessarily provides contrastive information, I will not discuss them in this paper as focus structures. The readers may find some discussion of the *bǎ*-phrase as a prepositional phrase in Section 2.2.

² Throughout this paper, stressed (hence focused) elements are put into boldface letters both in the original language as well as in the translation, but not in the glossing.

(1c)³, and the verb in (1d). In addition, in-situ foci give new information, as they can appear in question/answer pairs.⁴ Thus (1a-c) can be used to answer questions in (3a-c) respectively.

- (3) a. *Shéi chī-le yī-ge píngguǒ?*
 who eat-PER one-CL apple
 'Who has eaten an apple?'
 b. *Zhāngsān chī-le yī-ge shénme?*
 Zhangsan eat-PER one-CL apple
 'What has Zhangsan eaten?'
 c. *Zhāngsān chī-le jǐ-ge píngguǒ?*
 Zhangsan eat-PER how-many-CL apple
 'How many apples did Zhangsan eat?'

Formal focus, on the other hand, involves the use of some focus word, which I will call focalizer, and the focused element always appears before the focalizer. The element in the focus position also bears stress and yields contrastive information. In (2), the focalizer is *dōu* and the element appeared in the focus position is *lián píngguǒ* 'even apples',⁵ corresponding to a gap in the postverbal object position. The difference between formal focus and in-situ focus is that formal focus does not give new information. For instance, it cannot be used to answer questions. Thus (2) cannot be the answer for (4).

- (4) *Mǎlǐ chī shénme?*
 Mary eat what
 'What does Mary eat?'

The appropriate answer to (4) can only be (5), which involves the use of in-situ focus.

- (5) *Mǎlǐ chī píngguǒ.*
 Mary eat apple
 'Mary eats apples.'

³ For a detailed discussion of classifier phrases in Chinese, the readers are encouraged to refer to Gao 1994.

⁴ See Rochemont and Culicover 1990 for discussion.

⁵ Although I constantly use 'even' to translate the *lián...dōu* construction, the reader should be cautioned that *even* is not an English equivalent for Chinese *lián*. For one thing, in English 'even' signals the polarity context in which Fauconnier's (1975b) pragmatic scales apply. The same context in Chinese, however, is provided by the focalizer, not *lián*, since *lián* is only optional. Thus it may be appropriate to treat 'even' as equivalent only to the (*lián*)...*dōu* construction in Chinese. (Carl Pollard personal communication). For a detailed discussion of English *even*, the readers are referred to Fauconnier 1975a and Barker 1991.

Semantically, *lián* seems to be related to the preposition, *lián* in (i), which means 'adding' or 'together with'.

- (i) *Lián wǒ zhèlǐ yìgòng sānshí-ge rén.*
 adding I here altogether thirty-CL person
 'Adding me, there are thirty people here.'

Thus, in the *lián...dōu* construction, the use of *lián* is to suggest that there are more items than have been mentioned. This can be further confirmed by the fact that when a universal quantifier is used before the focalizer, *lián* is no longer felicitous, as is shown by the following.

- (ii) *Zhāngsān (*lián) shénme dōu chī.*
 Zhangsan even everything FOC eat
 Zhangsan (=even) eats everything.

Formal focus does not rule out the possibility that some element in other than the focus position in the same sentence can be stressed. Thus it is possible that in the same formal focus construction, we may also have other in-situ focus. Usually, if two kinds of foci are found in the same sentence, it is the in-situ focus, not the formal focus, that will bear the primary sentential stress.⁶ This is shown in (6).

- (6) **Mǎi lián píngguǒ dōu bù chī.**
 Mary even apple FOC not eat
 'It is **Mary** who does not even eat apple.'

1.2. Difference between Quantificational Use of *dōu*/yě and the Focalizer *dōu*/yě

I have shown that the word *dōu* is used as a focalizer to mark the focus position in formal focus structures. However, not all the occurrences of *dōu* signal the formal focus structures. This is because the word *dōu* is also used as a universal quantifier, as is shown in (7).

- (7) **Tāmen dōu lái-le**
 they all come-PER
 a. 'All of them have come.'
 b. *'Even they have come.'
- (8) **Zhāngsān dōu lái-le**
 Zhangsan FOC come-PER
 a. *'All of Zhangsan has come.'
 b. 'Even Zhangsan has come.'

The difference between the quantificational use of *dōu* and the focalizer *dōu* can be explained as follows. First, the quantificational *dōu* is used to modify plural entities, while there is no such requirement for the focalizer *dōu*. This becomes clear if we compare (7) with (8). In (7), where the subject is plural in number, we get the quantificational interpretation. In (8), however, the quantificational interpretation is absent simply because there is no appropriate element for *dōu* to quantify over.

Secondly, quantificational *dōu* usually gets the sentential stress while the focalizer *dōu* does not. Instead, it is the element appearing before the focalizer that gets the sentential stress. This is shown in (7) and (8) as well as in the following.

- (9) **Háizimen dōu lái-le**
 children all come-PER
 a. 'All the children have come.'
 b. *'Even the children have come.'
- (10) **Háizimen dōu lái-le**
 children FOC come-PER
 a. *'All the children have come.'
 b. 'Even the children have come.'

⁶ It has come to my attention that English seems to have the same phenomenon. In (i) we have the formal focus structure where the object *John* is placed into focus position. However, in (ii) *Mary* is given a primary stress hence contrasted. In (iii) the primary stress is on *saw*.

- (i) It was **John** that Mary saw.
 (ii) It was John that **Mary** saw.
 (iii) It was John that Mary **saw**.

Thirdly, it is always possible to have a particle *lián* 'even' cooccurring with the focalizer.⁷ This combination is not possible if *dōu* is used quantificationally. The following examples show this.

- (11) **Lián tāmen dōu lái-le*
even they all come-PER
- (12) **Lián Zhāngsān dōu lái-le*
even Zhangsan FOC come-PER

Finally, the focalizer *dōu* has a fixed position (see subsequent sections for the analysis) while the quantificational *dōu* does not. Variation of the position of the quantificational *dōu* signals different scope relations with other elements in the sentence, e.g. negation. This is not possible for the focalizer *dōu*, as can be seen in the following examples.

- (13)a. *Tāmen dōu méiyǒu lái.*
they all not-PER come
'None of them has come.'
- b. *Tāmen méiyǒu dōu lái.*
they not-PER all come-PER
'Not all of them have come.'
- (14)a. *Wǒmen dōu bù huì qù de*
we all not will go PARTICLE
'None of us will go.'
- b. *Wǒmen bù huì dōu qù de*
we not will all go PARTICLE
'Not all of us have come.'
- (15)a. *Lián tāmen dōu méiyǒu lái.*
even they FOC not-PER come
'Even they have not come.'
- b. **Lián tāmen méiyǒu dōu lái.*
even they not-PER FOC come
- (16)a. *Lián Zhāngsān dōu bù yuànyì qù*
even Zhangsan FOC not willing go
'Even Zhangsan does not want to go.'
- b. **Lián Zhāngsān bù yuànyì dōu qù*
even Zhangsan not willing FOC go

Another word that can be used as a focalizer in Chinese is *yě*, which is homophonous with an adverb meaning 'also'. The adverbial use of *yě* is given in (17), where the translations show when a different element is stressed (in-situ focus).

⁷ It is still not clear to me how *lián* should be treated syntactically. It behaves like a focus particle in the same way that *ne* does as the negation particle in the analysis of French in Pollock 1989. For instance, just like French *ne*, *lián* is often optional. The difference between *lián* and *ne*, though, is that *lián* always moves with the focused element. That is, it is always to the left of the focused element no matter where the focused element is at S-Structure. This unique property is always helpful in identifying the focused element. Thus I will disregard its optionality and, whenever possible, always use it when a formal focus structure is introduced. The reader should be aware that this treatment is only for the purpose of convenience.

- (17) Zhāngsān yě chī píngguǒ
 Zhangsan also eat apple
 a. 'Zhangsan also eats apples.'
 b. 'Zhangsan also **eats** apples.'
 c. 'Zhangsan also eats **apples**.'
- (18) Zhāngsān (lián) pínggǒu yě chī.
 Zhangsan (even) apple FOC eat
 a. *'Zhangsan also eats apples.'
 b. *'Zhangsan also **eats** apples.'
 c. 'Zhangsan even eats **apples**.'

The possible cooccurrence of *lián* with *yě* in (18) shows that *yě* is not used as an adverbial. Instead, it is a focalizer which signifies that the element before it is in focus. When *yě* is used as a focalizer, it is often interchangeable with *dōu*. Thus if we replace *yě* with *dōu* in (18), the meaning of the sentence remains the same.

1.3. The Semantics of (*lián*)...*dōu*/*yě*

Like in-situ focus, formal focus structure always yields additional semantic interpretations. Consider (19) and (20) below.

- (19) Zhāngsān lián Mǎlǐ dōu bù rènshi
 Zhangsan even Mary FOC not know
 'Zhangsan does not even know Mary.'
- (20) Zhāngsān lián Mǎlǐ dōu qǐng-le
 Zhangsan even Mary FOC invite-PER
 'Zhangsan even invited Mary.'

In (19), we do not only get the interpretation that Zhangsan does not know Mary. In uttering (19), the speaker presupposes that there is a set of people among whom Mary is the most likely person that Zhangsan may have known. The use of the focused structure thus gives us contrastive information: since Zhangsan does not know Mary, it is unlikely that he would know anyone else (in the presupposed set). The same presupposition is apparent in (20), where the speaker assumes that Mary is the least likely person that Zhangsan would invite. Since Zhangsan did invite her, he must have invited all the people (in the presupposed set).

Another important aspect about formal focus structure is that it provides a polarity context with negation. Consider (21) below.

- (21) Zhāngsān lián yī-ge píngguǒ dōu bù chī
 Zhangsan even one-CL apple FOC not eat
 'Zhangsan does not eat **one single** apple.'

The focused element in (19) is *yī-ge píngguǒ* 'an apple'. According to Paris 1979, the classifier phrase *yī-ge* is usually used as an existential quantifier. However, in (21) this classifier phrase has the quantificational force of a universal quantifier. Paris believes that this reversion of polarity can be explained by assuming Fauconnier's (1975b) 'pragmatic scales'. The pragmatic scalar principle says roughly that if a property holds for x_j on a scale S , it will hold for x_i if $x_i < x_j$. For example, if the scale S is a quantitative scale and R stands for 'Zhangsan eats', then 'Zhangsan eats two apples' pragmatically implies 'Zhangsan eats one apple'. This pragmatic implication can be reversed in the context of

negation. Thus in (21), *yī-ge* is lowest on the quantitative scale, but under negation, it is reversed to the highest on the scale, hence the quantificational effect of a universal quantifier. If we assume that the negation reverses the polarity, then it must be the case that the focalizer *dōu* provides the polarity contexts. Note that without the focalizer, there is no polarity item for the reversion. This is clearly demonstrated in (22).

- (22) Zhāngsān bu chī yī-ge píngguǒ.
 Zhangsan not eat one-CL apple
 'Zhangsan does not eat an apple.'

If *yī-ge* is indeed a polarity item in (21) and under negation it behaves as a universal quantifier, as Paris argues, then we should expect that if it is replaced by another universal quantifier, the meaning should not be changed. Paris claims that *shénme* in Chinese is an example of a universal quantifier⁸. The following examples show that the prediction is borne out (Cf Footnote 5)

- (23) Zhāngsān (*lián) shénme píngguǒ dōu bu chī.
 Zhangsan even every apple FOC not eat
 'Zhangsan does not eat any (kind of) apples.'
- (24) Mǎlì (*lián) shénme dōu huì zuò.
 Mary even everything FOC know do
 'Mary can do everything.'

⁸ It has been claimed that *shénme* also functions as existential quantifier. For instance, Cheng 1992 claims that *shénme* in the following is ambiguous between a wh-word and an existential quantifier.

- (i) Nǐ xiǎng chī shénme ma?
 you want eat what Q

However, I find (and many of my colleagues also agree with me) that it is very hard, if not impossible, to get the existential reading of the wh-word in (i). That is, (i) is not ambiguous at all and can only have the reading of an information question (at least for those Chinese speakers I encountered). In order for the wh-word to be understood as carrying an existential force, we have to use the *diǎnr*, as in the following.

- (ii) Nǐ xiǎng chī diǎnr shénme ma?
 you want eat a-little what/something Q
 a. 'What do you want to eat (a little bit of)?'
 b. 'Do you want to eat (a little bit of) something?'

That is, only when *diǎnr* 'a little bit' is used can we find the wh-word ambiguous. But then it is no longer appropriate to claim that it is the wh-word that causes the ambiguity. Thus it is still doubtful that wh-words can function as existential quantifiers in Chinese.

Another piece of evidence comes from the absence of the accompanying word *lián*. As noted in Footnote 5, *shénme*, when formally focused, does not go with *lián*. This seems to be consistent with other universal quantifiers such as *shuōyǒude* 'every single one of'.

- (iii) Tā (*lián) shénme píngguǒ dōu chīguo.
 he even every apple FOC eat-PAST
 'Zhangsan tasted all (kind of) apples.'
- (iv) Tā (*lián) shuōyǒude píngguǒ dōu chīguole.
 he even every-sing-one-of apple FOC eat-PAST-PER
 'Zhangsan tasted all apples.'

It should also be mentioned that even if *shénme* could be used as an existential quantifier, it would not alter the analysis presented in this paper, for the existential use of wh-word may also be treated like other existential quantifiers.

Another piece of evidence to show that *yī-ge* in (21) is not a usual classifier phrase but a polarity item (the lowest on the quantitative scale) comes from the fact that classifiers other than singular number cannot appear in the focused position. This is shown in the following examples.⁹

- (25) Zhāngsān lián *yī-ge*/**liǎng-ge*/**shǐ-ge* píngguǒ dōu bù chī
 Zhangsan even one-CL two-CL ten-CL apple FOC not eat.
 'Zhangsan does not eat **any** apple.'
- (26) Zhāngsān bù chī *yī-ge*/ *liǎng-ge*/*shǐ-ge* píngguǒ.
 Zhangsan not eat one-CL two-CL ten-CL apple
 'Zhangsan does not eat an apple/two apples/ten apples.'

Thus I have shown that there are (at least) two entries of *dōu* in the Chinese lexicon, one as the universal quantifier, and another as a focalizer. If this distinction is indeed true, we should predict that cooccurrence of the two within a single structure should be allowed without redundancy of information. This prediction is borne out in the following examples. Suppose that two groups of people are required to have full attendance at a conference but when found that both groups have some absentees, each group may use (27b) as an excuse (when asked by the conference organization committee). If we have the right context, (28b) is also a perfectly acceptable sentence.

- (27)a. Tāmen méiyǒu *dōu* lái.
 they not-PER all come
 'Not all of them have come.'
- b. Lián tāmen *dōu* méiyǒu *dōu* lái.
 even they FOC not-PER all come
 'Even they have not all come.'
- (28)a. Tāmen méiyǒu *dōu* mǎi zhè běn shū.
 they not-PER all buy this CL book
 'Not all of them have bought this book.'
- b. Lián tāmen *dōu* méiyǒu *dōu* mǎi zhè běn shū.
 even they FOC not-PER all buy this CL book
 'Even they have not all bought this book.'

2. Focus Movement and the Focus Criterion

2.1. The Focus Movement

I have shown that *dōu/yě* in Chinese can be treated as a focalizer because it provides a polarity environment and the constituent before it bears sentential stress, thus yielding contrastive information. I will call this stressed constituent the focused element. In this section I will show that the focused element is best understood not to be base-generated in the pre-focalizer position, but moved to this position through Move α . I will also show that the movement to pre-focalizer position is an obligatory movement to [Spec, FP] triggered by the Focus Criterion, which is a specific instantiation of the universal principle of Spec-Head Agreement.

⁹ Peter Culicover (personal communication) points out to me that English displays a similar phenomenon.

(i) Not one apple/*two apples/*ten apples did John eat.

In order to show that the focused element in a formal focus structure is not an in-situ category, we must show that a) this category is subcategorized for something other than the focalizer, b) there is a gap in the subcategorized position that holds a one-to-one relation with the focused elements, and c) the focused element c-commands¹⁰ the gap. That is, the trace must be properly governed by the antecedent focused element. The following examples show that this is indeed true with formal focus structures in Chinese.

- (29)a. Xiǎoméi bu huì chàng gē.
Xiaomei not know sing song
'Xiaomei doesn't know how to sing a song.'
- b. *Xiǎoméi lián dōu bu huì chàng gē.
Xiaomei even FOC not know sing song
- c. Xiǎoméi lián gē dōu bu huì chàng.
Xiaomei even song FOC not know sing
'Xiaomei even don't know how to sing a song.'
- (30)a. Zhè wǎn fàn, Xiǎoméi méiyǒu chī yī kǒu.
this bowl rice Xiaomei not-PER eat one mouth
'Xiaomei did not take a bite of this bowl of rice.'
- b. *Zhè wǎn fàn, Xiǎoméi lián dōu méiyǒu chī yī kǒu.
this bowl rice Xiaomei even FOC not-PER eat one mouth
- c. Zhè wǎn fàn, Xiǎoméi lián yī kǒu dōu méiyǒu chī.
this bowl rice Xiaomei even one mouth FOC not-PER eat
'Xiaomei even did not take a single bite of this bowl of rice.'
- (31)a. Xiǎoméi bu gǎn zuò fēijī.
Xiaomei not dare sit airplane
'Xiaomei does not dare to take a ride on an airplane.'
- b. *Xiǎoméi lián dōu bu gǎn zuò fēijī.
Xiaomei even FOC not dare sit airplane
- c. Xiǎoméi lián zuò fēijī dōu bu gǎn.
Xiaomei even sit airplane FOC not dare
'Xiaomei does not dare even to take a ride on an airplane.'
- (32)a. Zhāngsān bu yuànyì cóng jiālǐ náchū yī-bēn shū lái.
Zhangsan not willing from home take-out one-CL book come
'Zhangsan does not want to bring out a book from his home.'
- b. *Zhāngsān lián dōu bu yuànyì cóng jiālǐ náchū yī-bēn shū lái.
Zhangsan even FOC not willing from home take-out one-CL book come
- c. Zhāngsān lián cóng jiālǐ náchū yī-bēn shū lái dōu bu yuànyì.
Zhangsan even from home take-out one-CL book come FOC not willing
'Zhangsan does not want even to bring out a book from his home.'
- (33)a. Zhāngsān bu gǎn bǎ Lǐsì dǎ yī-xià.
Zhangsan not dare BA Lisi hit one-CL
'Zhangsan does not dare to hit Lisi once.'
- b. *Zhāngsān lián dōu bu gǎn bǎ Lǐsì dǎ yī-xià.
Zhangsan even FOC not dare BA Lisi hit one-CL

¹⁰ I assume the definition of c-command found in Chomsky 1986b, which goes as follows.

(i) α c-commands β iff α does not dominate β and every δ that dominates α dominates β .

- c. Zhāngsān lián bǎ Lìsì dǎ yī-xià dōu bu gǎn.
Zhangsan even BA Lisi hit one-CL FOC not dare
'Zhangsan does not dare even to hit Lisi once.'
- (34)a. Wǒ tóngyi nǐ dào měiguó qù xuéxi.
I agree you arrive-at America go study
'I agree for you to go to the U.S. to study.'
- b. *Wǒ lián dōu tóngyi nǐ dào měiguó qù xuéxi.
I even FOC agree you arrive-at America go study
- c. Wǒ lián nǐ dào měiguó qù xuéxi dōu tóngyi.
I even you arrive-at America go study FOC agree
'I agree even for you to go to the U.S. to study.'

In the above examples, the one-to-one correspondence between the focused element and the gap is clear. In (29c) and (30c), the focused elements are NPs and so are the gaps. (31c), (32c), and (33c) show that moved elements are VPs and so are the gaps. In (34c) the focused element is a clause and so is the gap. Based on the one-to-one relationship between the focused elements and the gaps and the similar logical relations between the (a) and (c) sentences, it is reasonable for us to assume that the traces are indeed left behind by the focused elements when they have moved. The ungrammaticality of the (b) sentences show that if (*lián*)...*dōu* is present, the focused elements must move to the left of *dōu*. These examples also show that the moved elements are maximal projections (i.e. full phrases such as NP's¹¹ in (29)-(32), a VP in (33) and a CP in (34)) and that, in each sentence, only one maximal projection is moved to the left of *dōu*.

Examples in (29)-(34) also show that the gap in each (c) sentence is best analyzed as a trace, not a pro. This is because the antecedent of a pro cannot be VP. In (32c) and (33c), however, the antecedents are VPs.

I will assume the more restrictive Empty Category Principle discussed in Rizzi 1990, which says that an EC must be antecedent-governed as well as lexical-governed at S-Structure. Thus the traces in the (c) sentences in (29)-(34) all obey the ECP. If we assume with Tang 1990 that in Chinese adverbial phrases are adjuncts which are adjoined to XPs and therefore are not lexical-governed, then we will predict that adverbial phrases do not undergo focus movement in Chinese. This prediction is borne out.

- (35)a. Mǎlǐ zuótiān méiyǒu lái.
Mary yesterday not-PER come
'Mary did not come yesterday.'
- b. *Mǎlǐ lián zuótiān dōu méiyǒu lái.
Mary even yesterday FOC not-PER come
- (36)a. Zhāngsān bùxiǎoxīn dǎ-shāng-le Lìsì.
Zhangsan carelessly hit-wound-PER Lisi
'Zhangsan carelessly wounded Lisi.'
- b. *Zhāngsān lián bùxiǎoxīn dōu dǎ-shāng-le Lìsì.
Zhangsan even carelessly FOC hit-wound-PER Lisi

Prepositional phrases in Chinese behave like adverbials in that they are mainly found in preverbal positions and are generally used to modify verb phrases. Thus

¹¹ In (30), I am assuming an empty head in the object NP, where *yī kǒu* is treated as the specifier of the NP. See Gao 1994 and in progress for a detailed discussion of this analysis.

syntactically they cannot be treated as subcategorized categories of verbs. Therefore we should not expect them to undergo formal focus movement.¹² The following examples show that this is the case.

- (37)a. Zhāngsān cóng jiāli ná-lái-le yī-ben shū.
Zhangsan from home take-come-PER one-CL book
Zhangsan has brought a book from his home.
- b. *Zhāngsān lián cóng jiāli dōu ná-lái-le yī-ben shū.
Zhangsan even from home FOC take-come-PER one-CL book
- (38)a. Mǎlǐ bǎ gōngzuò wánchéng-le.
Mary BA work complete-PER
Mary has completed her work.
- b. *Mǎlǐ lián bǎ gōngzuò dōu wánchéng-le.
Mary even BA work FOC complete-PER

2.2. The Focus Criterion

Recent studies (Chomsky 1991, Rizzi 1991, Culicover 1992) pursue the hypothesis that in languages constituents move only to satisfy some requirements. The basic requirement outlined in Chomsky 1992 is Spec-Head Agreement. For instance, some maximal projections move to [Spec, XP] only because they have some active features to check off. Some X^0 categories move to adjoin to other X^0 categories because either they have some features that need to be discharged or other X^0 categories need to be morphologically supported (Chomsky 1992, Culicover 1993). For instance, to account for wh-movement in English (as well as in other languages with either overt or covert wh-movement), Rizzi 1991 proposes the Wh-Criterion, which goes as follows.

- (39) The Wh-Criterion
A. A Wh-Operator must be in a Spec-Head configuration with an $X_0[+WH]$.
B. An $X_0[+WH]$ must be in a Spec-Head configuration with a Wh-Operator.

¹² One exception is the PP headed by *duì* 'towards'. In Paris 1979 we find the following example.

- (i). Zhāngsān lián duì zìjǐ de tàitai dōu bù shuō yī-jǔ huà
Zhangsan even towards self DE wife FOC not say one-CL speech
Zhangsan doesn't say a word even to his wife.

The exact explanation for this is still unknown. However, we want to point out that *duì* behaves differently from other prepositions also in other aspects of syntax. For instance, in Chinese prepositional phrases generally do not modify NP's, as the following examples show.

- (ii) *bǎ gōngzuò de wánchéng
BA work DE completion
- (iii) *cóng zhōngguó de lǚxíng
from China DE journey

However, phrases headed by *duì* are constantly found as NP modifiers.

- (iv) duì zǔguó de rèài
towards motherland DE love
'the love for the motherland'
- (v) duì lǎoshī de zūnzhòng
towards teacher DE respect
'the respect for teachers'

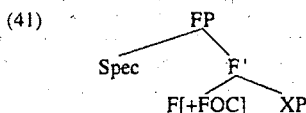
The Wh-Criterion in (39) explains the following.

- (40) a. *I wonder [C⁰[+WH] [Mary has seen who.]]
 b. I wonder [who C⁰[+WH] [Mary has seen t.]]

Since *wonder* selects a CP headed by C⁰[+WH], (40a) violates (39) because C⁰[+WH] is not in a Spec-Head configuration with a Wh-Operator. On the other hand, (40b) is well formed simply because the [Spec, CP] is filled with a Wh-Operator.

In the same manner, Rizzi also proposes the Negation Criterion to account for Negative Inversion in English and some other languages. A similar version of the Focus Criterion is also suggested in Brody 1991 and Choe 1992 to account for focus structures in Hungarian and Korean, respectively. If these proposals are UG principles, we should expect them to apply in Chinese as well. In this subsection, I will show that this is the case.

First, let's assume that the focalizer in a Chinese formal focus construction is the head of a focus phrase. According to X-bar theory, this head (F) will project to its maximal projection FP, thus creating a FP configuration as (41), where F always carries the [+FOC] feature.



Let us also assume that the Focus Criterion of Brody and Choe, stated in (42), holds for Chinese.

(42) The Focus Criterion

- A. The focused element must be in a Spec-Head configuration with the F[+FOC].
 B. The F[+FOC] must be in a Spec-Head configuration with the focused element.

Now let's look at the examples in (29)-(34) again. In all the (a) sentences, no focalizer is present, thus [+FOC] is absent. The Focus Criterion is vacuously satisfied and we get these normal and grammatical sentences. In all the (b) sentences, the focalizer *dōu* is present and carries the [+FOC] feature. However, nothing moves into [Spec, FP] to check off the [+FOC] feature and thus the Focus Criterion is violated. This causes these sentences to crash at PF.¹³ All the (c) sentences, on the other hand, are well formed. The presence of the focalizer signals the presence of the [+FOC] feature and the [Spec, FP] is also filled. Thus, the Focus Criterion is satisfied. Those sentences are therefore understood as carrying contrastive information.

¹³ I assume with Chomsky 1992 that beyond the S-Structure there are two interface levels: the phonetic form (PF) and the logical form (LF). At PF the phonetic well-formedness of a sentence will be checked. At LF the semantic well-formedness will be checked. In the case of feature-checking, strong features must be checked at S-Structure so as to satisfy the phonetic well-formedness condition at PF. The checking of weak features can be delayed until LF since it does not affect the phonetic well-formedness at PF.

Thus, I have shown that if we assume the Focus Criterion, Chinese formal focus structure can be analyzed as movement to [Spec, FP], and that (29)–(34) show that the Focus Criterion must be satisfied at S-Structure for formal focus structures.

2.3. The Focus Criterion and In-situ Focus.

I have shown that Chinese formal focus structures can be explained by assuming the Focus Criterion, which triggers focus movement at S-Structure. It is reasonable now to ask whether the Focus Criterion applies to in-situ focus, since in-situ focus does not involve overt syntactic movement.

Recall that in-situ focus is different from formal focus in Chinese in that in-situ focus gives new information and it can be used in question/answer pairs. This is no surprise if we consider that questions are generally linguistic forms for soliciting new information. Thus it is quite understandable that in-situ focus be directly related to wh-questions. Chinese has been widely cited as a wh-in-situ language. But being a wh-in-situ language does not mean that wh-phrases do not move at all. Following Huang 1982 and Aoun 1986, I assume that wh-phrases in Chinese do move, not at S-Structure, but at LF, in order to get wide scope. Thus in wh-in-situ languages, the WH-Criterion is satisfied at LF.

Similarly, for in-situ focus structures, I propose that Focus Criterion is also satisfied at LF, thus no overt focus movement is found in Chinese in-situ focus structures. My proposal is based on the following reasoning: In Chinese formal focus structures, the FOC feature is carried by the lexical head (the focalizer) *dōu/yě*. Suppose that this makes the FOC feature strong. According to the proposal in Pollock 1989, Chomsky 1991, and Hoekstra and Zwart 1992, strong features must be checked at S-Structure. Otherwise the unchecked feature will cause the sentence to crash at PF. This entails that the Focus criterion must apply to Chinese formal focus structures at S-Structure. In-situ focus, on the other hand, carries only a weak FOC feature. Thus it does not have to be checked at S-Structure, since unchecked weak features does not cause the sentence to crash at PF. However, the FOC feature will be checked at LF so that we get the correct interpretation of the sentence. According to the Economy Principle (Chomsky 1991), movement at LF is more economical than that at S-Structure. This explains why Chinese in-situ focus does not involve overt focus movement: the focused elements only moves at LF.¹⁴

3. Position of Focus Phrases

3.1. The Subject and the FP.

I have shown that in Chinese formal focus structures must satisfy the Focus Criterion at S-Structure. Thus we have explained why the focused element must move to [Spec, FP]. Now we consider the question where the FP is in a Chinese formal focus sentence.

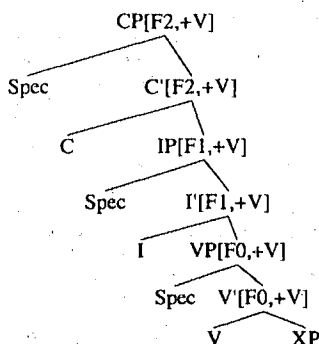
Recall that in Section 2 we showed that the focused element must c-command its gap. This will rule out the possibility that FP is adjoined to a category that contains the gap because the Spec of adjoining XP cannot c-command anything that is dominated by

¹⁴ This strong/weak feature distinction may also be used to explain covert wh-movement in Chinese and overt wh-movement in English: in Chinese, the [+WH] features are weak, thus wh-words move only at LF; in English, on the other hand, [+WH] features are strong, thus we find syntactic wh-movement (at S-Structure).

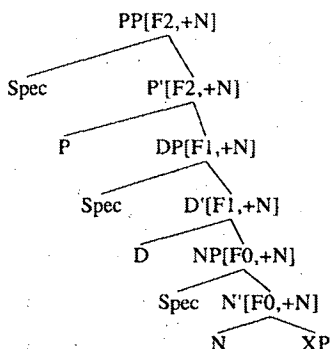
the adjoined category. In order for the Spec of FP to c-command its gap, the gap must be dominated by the category that is subcategorized for by the head F.

In light of this reasoning, I will assume FP as a level of the verbal projections, along the lines suggested in Grimshaw 1991, where two basic projections are strongly argued for. One kind of projection is headed by N (a nominal projection having the feature [+N]). DP is regarded as an extended projection over NP and PP is an extended projection over DP. PP, DP, and NP all share the lexical feature [+N]. They differ from each other by levels: NP is an F0 level projection, DP is an F1, and PP is F2. Contrasted with the nominal projections are the verbal projections which all share the feature [+V]: VP is an F0 level verbal projection, IP is F1, and CP is F2. Thus the two basic projections form the following configurations.

(43) Verbal projections



(44) Nominal projections



Some restrictions on the projections are also discussed. For instance, it is argued that V and N are the only lexical heads, which can select XP's that belong to a different projection. That is, a V can select either an XP[+V] or an XP[+N], and so can a N. Other heads are functional heads, which can only select XP's that share the same lexical feature with the selecting head and that are one level down. Thus C can only select IP, and I only VP. For evidence supporting this system and a discussion of its advantages, see Grimshaw 1991.

In this system, the functional levels are designated by numerals and therefore are made very flexible. There seem to be no restrictions on how high the levels can go. But this should not be a big concern in this paper.¹⁵ In recent studies of focus structure, FP has been suggested as a level of verbal projection. For instance, Brody 1991 proposes that FP is one level higher than IP, thus F can select IP to form an FP-IP sequence. However, Horvath 1991 voices concern about this treatment. She observes that FP is not an obligatory category. If FP is absent, C will have to select IP, which is two levels down from CP, thus violating the restriction that functional head can only select a one-level-down XP. To avoid this violation, I follow Culicover 1993 in assuming that FP is on the same level as IP. The restriction on the selectional power is accordingly revised to allow a functional head to select an XP either of the same level or one level down. Armed

¹⁵ However, some believe that this is a serious defect in the theory (Cf. Iatridou 1990). This paper will stay within the Minimalist Program Framework and keep the projections to the lowest possible levels.

with this theoretic background, let's turn to the following Chinese formal focus structures.

- (45) Zhāngsan lián Mǎlǐ dōu bu rènshi.
Zhangsan even Mary FOC not know
'Zhangsan even doesn't know Mary.'
- (46) Xiǎoméi lián chāng gē dōu bu huì.
Xiaomei even sing song FOC not know
'Xiaomei even doesn't know how to sing.'

In (45) and (46), we notice that Chinese focused elements occur to the right of the subject. Under the standard assumption, the subject occupies [Spec, IP] position in S-Structure because subjects need Case and [Spec, IP] is a Case position. This suggests that in Chinese FP should follow IP. That is, FP is selected by I. Under the previous assumption we made that IP and FP are of the same level verbal projections, this might seem reasonable. However, Horvath 1991 has voiced an objection to the IP-FP sequence. She notes that since the FP-IP sequence has been observed in many languages, it is wrong to assume that in another language we should find the IP-FP sequence. I believe Horvath's objection to IP-FP sequence is very reasonable. In addition, I find that there is also evidence against this treatment in Chinese. Consider the following examples.

- (47) Zhāngsan chī-le fàn.
Zhangsan eat-PER meal
'Zhangsan has eaten his meal.'
- (48) Zhāngsan méiyǒu chī fàn.
Zhangsan not-PER eat meal
'Zhangsan has not eaten his meal.'

According to Li and Thompson 1981, Dai 1991, and Gao 1992, *-le* is an inflectional morpheme, marking the perfect tense (Gao 1993). *Méiyǒu* is the negative counterpart of *-le*.¹⁶ Suppose that in Chinese, VP is base generated to the right of I (or

¹⁶ This relation can be shown in the following examples, where *méiyǒu* and *-le* are mutually exclusive in a single declarative sentence simply because they give conflicting statements.

- (i) Zhāngsan chī-le fàn.
Zhangsan eat-PER meal
'Zhangsan has eaten (his) meal.'
- (ii) Zhāngsan méiyǒu chī fàn.
Zhangsan not-PER eat meal
'Zhangsan hasn't eaten (his) meal.'
- (iii) *Zhāngsan méiyǒu chī-le fàn.
Zhangsan not-PER eat-PER meal

In Chinese, yes-no questions can take the form of A-not-A (See Huang 1988, Gao 1992). Thus (iv) is a declarative sentence and (v) is a corresponding question.

- (iv) Zhāngsan xǐhuan Mǎlǐ.
Zhangsan like Mary
'Zhangsan likes Mary.'
- (v) Zhāngsan xǐhuanbùxǐhuan Mǎlǐ?
Zhangsan like-not-like Mary
'Does Zhangsan like Mary?'

The A-not-A form for the perfect tense *-le*, however, is the combination of *-le* and *méiyǒu*, not *le-not-le*, though it is possible to use *youméiyǒu* in some dialects.

VP is selected by I) and I is the residual position for the tense morpheme. Then at S-Structure, V has to move to morphologically support the tense morpheme, since *-le* is not a free morpheme. This explains why we have a V+I complex in (47), just like the case of French V+I complex proposed in Pollock 1989.¹⁷ In (40), on the other hand, there is a Neg head intervening between I and V, thus blocking V from joining I to form the V+I complex. Instead, the Neg head moves to adjoin to I and forms a Neg+I complex, which is realized phonologically as *méiyóu*¹⁸ in (48). Therefore we have an I-V sequence. Since *méiyóu* is already an independent word and no longer needs to be morphologically supported, we do not expect the V to move up to adjoin to I. This analysis explains why the sentences in (49) are ungrammatical.

- (49)a. *Zhāngsān chī-méiyóu fān.
Zhangsan eat-not-PER meal
b. *Zhāngsān méiyóu chī-le fān.
Zhangsan not-PER eat-PER meal
c. *Zhāngsān le chī fān.
Zhangsan PER eat meal

If the above analysis is correct, it makes predictions inconsistent with the hypothesis that in Chinese we have an IP-FP sequence. This is because, as (50) and (51) show, FP, in Chinese, can only occur to the left of I, not to the right.

- (vi) Zhāngsān chī-le fān méiyóu?
Zhangsan eat-PER meal not-PER
'Has Zhangsan eaten (his) meal?'

This phenomenon confirms that *méiyóu* is indeed a negative counterpart of the perfect tense marker *-le*.

¹⁷ Following Pollock 1989 and Rivero 1990, I assume that syntactic head-to-head movements do play an important role in word formations in some languages, especially here in Chinese. I am aware that this is very problematic in the case of Greek (Joseph and Smirniotopoulos 1993). One possible explanation for the difference between Greek and Chinese may be traced to the strength of morphology in the two languages. Intuitively at least, Greek has a strong (or rich) morphology, thus a syntactically derived sequence of morphemes is often overridden by morphological rules if mismatches occur. Chinese, on the other hand, has a very weak (or poor) morphology. Thus syntactical rules often prevail in determining the sequence of morphemes. However, as Brian Joseph (personal communication) points out, we need an understanding of what constitutes a strong morphology that reaches further than what our intuition provides.

¹⁸ This assumption is supported by the fact that in some Chinese dialects (Southern China and South East Asia), the A-not-A form of the inflection can be *yǒuméiyóu*.

- (i) Zhāngsān zuótiān yǒuméiyóu chī fān?
Zhangsan yesterday PER-not-PER eat meal
'Did Zhangsan eat (his) meal yesterday?'
(ii) Mǎlǐ yǒuméiyóu lái zhōngguó?
Mary PER-not-PER come China
'Has Mary come to China?'

In some South East Asian dialects we have even found that *-le* is constantly replaced with *yóu* in preverbal position, as is in the following sentences.

- (iii) Zhāngsān zuótiān yóu chī fān.
Zhangsan yesterday PER eat meal
'Zhangsan ate (his) meal yesterday.'
(iv) Tā zuótiān yóu xiūxi.
he yesterday PER rest
'He took a day off yesterday.'

- (50) Zhāngsān [f̩p lián fàn_i dōu [i_p méiyou [v_p chī t_i]]].
 Zhangsan even meal FOC not-PER eat
 'Zhangsan hasn't even eaten his meal.'
- (51) *Zhāngsān [i_p méiyou [f̩p lián fàn_i dōu [v_p chī t_i]]].
 Zhangsan not-PER even meal FOC eat

Sentence (50) and (51) are exactly the same except the order of FP and IP. In (50), the FP *lián fàn dōu* appears to the left of the IP, giving an FP-IP sequence, and the sentence is acceptable. In (51), on the other hand, the FP is positioned to the right of the IP, yielding an IP-FP sequence, and this results in an ungrammatical sentence. Therefore, we can conclude from (50) and (51) that in Chinese, we also have an FP-IP sequence in the verbal projections.

3.2. Nominative Case Assignment and the FP

As the above discussion shows, in Chinese, the FP, an intermediate verbal projection, can appear to the right of the subject. It also appears to the left of I. That is, an FP in Chinese appears between the subject and I. Under the normal assumption that the subject occupies [Spec, IP] and is assigned nominative Case by I under the configuration of Spec-Head Agreement, this would appear to be a serious problem, since FP intervenes between the [Spec, IP] and the head I. Recall that usually I is assumed to contain a bundle of features, among which there is an Agr, which is responsible for nominative Case assignment. Thus I will continue to assume the Split Infl Hypothesis in treating Agr as a separate head from I. Agr heads its own maximal projection AgrP. The subject is moved to [Spec, AgrP] and assigned the nominative Case by Agr under the Spec-Head Agreement Principle. Under this analysis, I is freed from any nominative Case assignment obligations and therefore no longer has to be adjacent to the subject.¹⁹ In our case, AgrP and IP can be separated by an FP without causing any theoretical problems. If this line of analysis is correct, then FP is (optionally) selected by Agr, which, in the absence of FP, is also the selector for IP²⁰ headed by the inflectional morpheme. Thus in a tensed negative sentence with FP present, the sequence of verbal projections will look like AgrP-(FP)-IP-(NegP)-VP, where FP and NegP are not obligatory projections. Under the present analysis, (50) has the following structure.

- (50') [_{AgrP} Zhāngsān [_{f̩p} lián fàn_i dōu [_{i_p} méi-you [_{NegP} t_i [_{v_p} chī t_j]]]]].
 Zhangsan even meal FOC not-PER eat
 'Zhangsan hasn't even eaten his meal.'

¹⁹ This proposal seems to suggest that Chinese lacks I-to-Agr movement, contra Chomsky 1992 who claims that I-to-Agr movement is needed if Agr is to assign nominative Case to the subject. One explanation for this may be that in English, Agr is a phonologically realized lexical form, for instance, the third person singular morpheme -s in simple present tense. The fact that I-to-Agr is needed is not because of the nominative Case assignment obligations, but because the bound Agr morpheme needs to be morphologically supported. In Chinese, however, Agr is never phonologically realized. Thus I does not need to move to Agr for morphological support.

²⁰ In the literature, when I is freed from nominative Case assignment obligations, it is often said to head a Tense Phrase (TP) and I is accordingly changed to T. This, however, is only a terminological difference. In this paper, I will not use TP for Tense Phrase. Instead, I will continue to use IP although I no longer contains the Agr feature. TP will be reserved for Topic Phrase.

4. Focus Movement and Topicalization

4.1. Subject and Nominative Case Assignment

I have shown that in Chinese, the nominative Case assigner must be separated from the tense morpheme. This analysis enables us to have FP between the subject and IP. Now let's consider the cases where the subject itself is the focused element, as the following examples show.

- (52) Lián Zhāngsān dōu bu rènshi Mǎlì.
 even Zhangsan FOC not know Mary
 'Even Zhangsan does not know Mary.'

In (52), *Zhāngsān* is in the normal focused element position. But it also functions as the subject of the sentence and therefore must be in the position where Agr can assign it nominative Case. There are two possible ways to analyze this structure. The first is to assume that *Zhangsan*, being base-generated within VP (cf: Koopman and Sportiche 1991 and Speas 1990), moves to [Spec, FP] and stays there. It can get the nominative Case from Agr if we assume that Agr can be an exceptional Case assigner, in the way that Horvath suggests for Hungarian. Another way to analyze (52) is that when *Zhangsan* moves to [Spec, FP] and gets the [+FOC] feature discharged, it will continue to move up to [Spec, AgrP] to get Case. Of the two analyses, we have two reasons to choose the second one. First, it is not clear why Agr can assign exceptional Case (Case that the head assigns to the Spec position of its subcategorized XP). Besides [Spec, FP], we do not have any other evidence that nominative Case is assigned this way. For instance, in examples where [Spec, AgrP] and [Spec, FP] are both filled, which position should have the priority in receiving the nominative Case? At the very least, we would have to stipulate some kind of priority principle in cases like this. Second, another piece of evidence suggests that the focused element will continue to move to satisfy other requirements. For instance, it may move again to the left of the subject, as is shown by the following examples.

- (53) Lián Mǎlì Zhāngsān dōu bu rènshi.
 even Mary Zhangsan FOC not know
 'Zhangsan even does not know Mary.'

In (53), the primary stress on *Mǎlì* and the possible cooccurrence of *lián* to the left of *Mǎlì* indicate that *Mǎlì* is the focused element. It must have been moved out of [Spec, FP] to the left of the subject, hence to the left of AgrP. In the next subsection, we will discuss what this position is.

4.2. Difference between [XP, TP] and [Spec, TP]: the Binding Principle

In the case of (53), one may suggest that the position that *Mǎlì* takes is the Topic position. But there may be some problems with this assumption. First, as Chinese is often quoted as one of the topic prominent languages, it has been argued that Topic is base generated. This is because there is substantial evidence that there is no one-to-one correspondence between the Topic and the possible gap within the sentence. For instance, Gao 1992 gives the following examples. (Also see Huang 1989 and Her 1991 for examples with multiple topics.)

- (54) Wū-ben xīn shū, tā jièzǒu-le sān-ben.
 five-CL new book he borrow-go-PER three-CL
 'Of the five new books, he checked out three.'

- (55) Zhè dòng fángzi, tāmen gāng ānzhūāng-hǎo chuānghu.
 this CL house they just install-ready window
 'As for this house, they have just installed the windows.'

If we assume that topic structure is always base-generated in Chinese, then *Mǎlǐ* in (53) may not move into the topic position. Actually, the following examples show that the focused element is moved to a position between the topic and the subject.

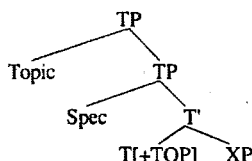
- (56) Wǔ-ben xīn shū, lián yī-ben Zhāngsān dōu bù kàn.
 five-CL new book even one-CL Zhangsan FOC not see.
 'Of the five new books, Zhangsan does not read even one of them.'
- (57) Zhè dòng fángzi, lián chuānghu tāmen dōu méiyǒu ānzhūāng-hǎo.
 this CL house even window they FOC not-PER install-ready
 'As for this house, they even haven't installed the windows.'

If the assumption that the topic is base generated in the initial position is correct, then we should not expect the possibility that the base-generated topic may be positioned in [Spec, FP]. This prediction is borne out in the following examples.²¹

- (58)a. *Tā lián wǔ-ben xīn shū dōu jièzǒu-le sān-ben.
 he even five-CL new book FOC borrow-go-PER three-CL
 b. *Lián wǔ-ben xīn shū, tā dōu jièzǒu-le sān-ben.
 even five-CL new book he FOC borrow-go-PER three-CL
- (59)a. *Lián zhè dòng fángzi, tāmen dōu méiyǒu ānzhūāng-hǎo chuānghu.
 even this CL house they FOC not-PER install-ready window
 b. *Tāmen lián zhè dòng fángzi dōu méiyǒu ānzhūāng-hǎo chuānghu.
 they even this CL house FOC not-PER install-ready window

In light of the above discussion, I will assume with Choe 1992 that in topic-prominent languages, the topic is base-generated adjoined to TP, as is shown in (60).

(60)



²¹ It has been pointed out to me (Carl Pollard personal communication) that with the help of *gèng-tán-bu-dào* 'not to speak', the acceptability of (59a) can be much improved (acceptable to some Chinese speakers).

- (i) Lián zhè dòng fángzi, tāmen dōu méiyǒu ānzhūāng-hǎo chuānghu, gèng-tā-bu-dào nà
 even this CL house they FOC not-PER install-ready window not-to-speak that
 dòng fángzi le.
 CL house LE
 'They did not even install the windows in this house, not to mention the other house.'

I suspect that this is because, for some Chinese speakers, *lián...dōu...*, *gèng-tán-bu-dào* is a (contrastive) conjunction. Thus (i) may have a very different structure from (59a). Note that with this conjunction, even the ungrammatical sentences discussed in (35)-(38) may be much improved.

In (60), the topic is base-generated in D-Structure. [Spec, TP] is where the focused element will be moving to if it has the [+TOP] feature that needs to be discharged. I will use 'topicalized focus' to refer to the phrase that occupies the [Spec, TP]. The structure in (60) suggests that topicalized focus moves to [Spec, TP] only because the moved phrase has the [+TOP] feature that needs to get discharged. The movement is justified by the Spec-Head Agreement principle. If this is true, we should not expect the topicalized focus to go beyond [Spec, TP]. The following examples show that our prediction is correct.

- (61) *Lián yī-ben_i [TP wǔ-ben xīn shū, tā dōu bu kàn t_i]
 even one-CL five-CL new book he FOC not see
 (62) *Lián chuānghu_i [TP zhè dōng fāngzi, tāmen dōu méiyǒu ānzhūāng-
 even window this CL house they FOC not-PER install-
 hǎo t_i]
 ready

The separation of base-generated topic and topicalized focus predicts that they have different binding properties. The following examples show that this prediction is borne out.

- (63)a. Tā_{i/j} de māma, [TP<sub>[AgrP Zhāngsān_i bu rènshi]].
 he DE mother Zhangsan not know
 'His_j mother, Zhangsan_i does not know.'
 b. [TP_{[AgrP Lián tā_{i/j} de māma} [AgrP<sub>[AgrP Zhāngsān_i dōu bu rènshi]].
 even he DE mother Zhangsan FOC not know
 'Zhangsan_i does not know his_{i/j} mother.'
 c. [TP<sub>[AgrP Zhāngsān_i bu rènshi tā_{i/j} de māma]].
 Zhangsan not know he DE mother
 'Zhangsan_i does not know his_{i/j} mother.'
 (64)a. *Tāzìjī, [TP<sub>[AgrP Zhāngsān_i bu xiāngxìn]].
 himself Zhangsan not believe
 b. [TP_{[AgrP Lián tāzìjī} [AgrP<sub>[AgrP Zhāngsān_i dōu bu xiāngxìn]].
 even himself Zhangsan FOC not believe
 'Zhangsan_i does not believe himself_i.'
 c. [TP<sub>[AgrP Zhāngsān_i bu xiāngxìn tāzìjī]].
 Zhangsan not believe himself
 'Zhangsan_i does not believe himself_i.'</sub></sub></sub></sub></sub></sub>

In the above examples, each of the (a) sentences²² has a base-generated topic which is separated from the rest of the sentence by a comma (representing an intonational break). In (b) the initial phrase preceded by *lián* is the topicalized focus with (c) as the source sentence. In (55a) *tā de māma* 'his mother' is base-generated at the Topic position. Assuming that Chinese does not allow backward binding, although *tā* is free in the NP *tā de māma*, which is the governing category, coindexing *Zhāngsān* with *tā* is disallowed since *Zhāngsān* is not in a c-commanding position over *tā*. In (63c), *tā* is free in its governing category, the NP *tā de māma* 'his mother', but is freely coindexed with the subject outside its category. When the NP is moved to [Spec, TP] through [Spec, FP], this coindexing is carried over and (63b) is grammatical. In (64a), the reflexive *tāzìjī*

²² I am assuming that the empty category in the object position of the (a) sentences is a pro, not a trace.

'himself' is base-generated outside the governing category of the subject *Zhangsan*, hence coindexing it with the subject violates Principle A. In (64c) the reflexive is base-generated at the object position. And when the reflexive moves to [Spec, TP] through [Spec, FP], its trace is governed by the subject *Zhangsan* and Principle A requires it to be coindexed with the subject.

For more evidence of the distinction between a base-generated topic and a topicalized focus phrase, the readers are encouraged to see Shyu 1994.

5. Focus Movement and Wh-Movement

5.1. Wh-Word and Wh-Movement

At the end of section 1, I discussed examples with universal quantifiers in the focused position. It is very interesting to note that some of the universal quantifiers share the same morphological forms as the wh-words.²³ Compare the following examples.

- (65)a. Tā *shénme* *píngguǒ* dōu chī.
he every apple FOC eat.
'He eats all (kinds of) apples.'
- b. Tā chī *shénme* *píngguǒ*?
he eat what apple
'What (kinds of) apples does he eat?'
- (66)a. Tā *shénme* dōu méiyǒu zuò.
he everything FOC not-PER do
'He has not done anything.'
- b. Tā méiyǒu zuò *shénme*?
he not-PER do what
'What has he not done?'

²³ Other words that show the same phenomenon includes *shéi* 'who' or 'everyone', *zěnmé* 'why' or 'for every reason', *shuò* (typically in some Northern China dialects) 'what' or 'everything', *duōshǎo* 'how much' or 'any amount', etc.

- (i) a. Tā *shéi* dōu bù pà.
he everyone FOC not afraid
'He is not afraid of anyone.'
- b. Tā bù pà *shéi*?
he not afraid who
'Who is he not afraid of?'
- (ii) a. Tā *shuō* dōu *shuō*.
he what FOC say
'He says everything.'
- b. Tā shuō *shuō*?
he say what
'What does he say?'
- (iii) a. Tā *duōshǎo* dōu néng ná zǒu.
he any-amount FOC can take-away
'He can carry any amount.'
- b. Tā néng ná zǒu *duōshǎo*?
he can take-away how-much
'How much can he carry?'

In the above examples, the (a) sentences show the quantificational use of *shénme* while the (b) sentences show that *shénme* is used as a wh-word. It is very interesting to note that the homophonous form is disambiguated when it appears in different syntactic positions: if *shénme* appears in the formal focus position, it has an interpretation of a universal quantifier only. This phenomenon can be readily explained under the analysis I have proposed so far. Recall that in Section 2 I showed that in Chinese formal focus structures the Focus Criterion must be satisfied at S-Structure. Suppose *shénme* is a potential [+FOC] or [+WH] feature carrier in the lexicon. What feature it carries in a sentence is then determined by the contexts it occurs in. If FP is present in a sentence, it is possible that F will license the [+FOC] feature on *shénme*. Then the Focus Criterion will force *shénme* to move to [Spec, FP]. Thus we interpret *shénme* only as a universal quantifier. If, on the other hand, *shénme* does not appear in a formal focus structure, or it appears in a formal focus structure but is not licensed with [+FOC], then it must carry [+WH] feature. In this case, we should not expect it to move to [Spec, FP]. Since Chinese is classified as a wh-in-situ language, where the WH-Criterion can be satisfied at LF (see Huang 1982, Rizzi 1991, and Lasnik and Saito 1992 for discussion), we will not see any overt wh-movement. Thus we get the interpretation of wh-questions in (b) sentences simply because *shénme* moves at LF and the WH-Criterion is satisfied there.²⁴

Following Huang 1982, Aoun 1986, Lasnik and Saito 1992, I assume that the landing site for a wh-phrase is [Spec, CP]. CP is an optional verbal projection over AgrP.

5.2. In-Situ Focus and Wh-Movement

In the above section, I have discussed Chinese formal focus movement and wh-movement. The difference between the two is manifold. In a formal focus structure, the movement takes place at S-Structure, while a wh-phrase moves only at LF. The focused element moves to [Spec, FP], which is to the right of the subject, while the landing site for a wh-phrase is [Spec, CP], which is to the left of the subject. However, when we compare wh-movement with in-situ focus structures, we find that there are more similarities than differences. First of all, both wh-phrase and in-situ focus involve movement at LF. I have argued that in the in-situ focus structure, the [+FOC] feature is weak, thus focus movement can be delayed until LF without causing the structure to crash at PF. It can also be assumed that in Chinese the [+WH] feature is also weak (compared with that of English, for instance).

Second, both wh-questions and in-situ focus structures have something to do with new information: a wh-question seeks for new information, but an in-situ focus structure provides new information. Formal focus structures, on the other hand, do not convey new information. This is shown clearly in Section 1 where I discuss the possibility that only in-situ focus structures can be used as answers to wh-questions, not formal focus structures. Besides, as in in-situ foci, wh-phrases often receive sentential stress. Thus (65b) and (66b) are often used with *shénme* having primary sentential stress and the meaning remains the same. These facts may greatly affect our considerations for the

²⁴ The natural question to ask at this point seems to be what happens if *shénme* carries both [+FOC] and [+WH]. The Chinese data seem to suggest that this never happens. One possible explanation for this may be that [+WH] is a lexical feature that *shénme* carries in the lexicon. [+FOC], on the hand, is a syntactic feature that is assigned by the head F. We may assume that when *shénme* is assigned [+FOC] feature, its [+WH] will be overridden. Otherwise, the [+WH] prevails.

landing site of the focused element in an in-situ focus structure. That is, when an in-situ-focused element moves at LF, should it move to [Spec, CP] or [Spec, FP]?

Before answering the question, let's first consider some other facts about in-situ focus. We have seen that in-situ focus and formal focus can cooccur in the same sentence. This is shown in (6) and the following.

- (6) **Mǎli** lián píngguǒ dōu bù chī.
 Mary even apple FOC not eat
 'It is **Mary** who does not even eat apple.'
- (67) Lián **Zhāngsān** dōu bù rènshi **Mǎli**.
 even Zhangsan FOC not know Mary
 'Even **Zhangsan** does not know **Mary**.'

Suppose that we take in-situ focus movement to be the LF counterpart of the S-Structure formal focus movement. That is, in (59) *Mǎli* will also move to [Spec, FP] at LF. Then we are forced to wonder how the same head F can contain both strong and weak [+FOC] feature at the same time. Secondly, we have shown that a formally focused element may move to [Spec, TP] if it also carries the [+TOP] feature. Generally, only elements that appear in the topic position are said to convey old information (or background information) (Choe 1992, Huang 1989, and Her 1991). If an in-situ-focused element behaves like a formally focused element, we may expect it to be able to move to [Spec, TP] when it also carries the [+TOP] feature. Then it is very hard to explain how an in-situ-focused element which generally conveys new information can also convey old information at the same time. These difficulties can be avoided if we do not assume that the landing site for in-situ focused element is [Spec, FP]. Especially, when we consider the similar behavior discussed earlier between wh-questions and in-situ focus structures, it is advisable that in-situ focus movement be treated on a par with wh-movement. Thus I will assume that an in-situ-focused element will move to [Spec, CP] at LF²⁵.

6. Conclusion

In this paper, I have shown that the Chinese formal focus displays convincing evidence for the Focus Criterion. I have argued that in Chinese formal focus structures the Focus Criterion must be satisfied at S-Structure. As for the cases of in-situ focus discussed at the beginning of this paper, one explanation is to assume the Dynamic Agreement Principle as discussed in Rizzi 1991: since there is no overt category F, hence a strong [+FOC] feature, to trigger focus movement, the focus element will move only at LF, where the head will be endowed with the [+FOC] feature by the focused element. Thus the Focus Criterion is satisfied there. The difference between in-situ foci and formal foci is thus attributed to the presence or absence of the overt category F at S-Structure.

Thus, after a detailed investigation, we have come to the conclusion that a Chinese sentence should have the projection sequence TP-(CP)-AgrP-(FP)-IP-(NegP)-VP. As a topic prominent language, the base-generated topic phrase is adjoined to TP. A topicalized phrase moves to [Spec, TP] to check off the [+TOP] feature. [Spec, CP] is where a wh-phrase or an in-situ-focus phrase will move to at LF. The difference between TP and CP is that TP is related to so-called background information while CP contains new or foreground information. This sequence also satisfies the general word order

²⁵ This may lead to the collapsing of wh-movement and in-situ-focus movement in Chinese: both involve a weak feature and thus LF movement; both have something to do with new information: wh-words seek new information while non-wh-words provide new information.

requirement in Chinese that background information usually precedes the foreground information. The subject stays in [Spec, AgrP] where it can get the nominative Case from the head Agr. The first landing site for the formal focus phrase is [Spec, FP]. This can be illustrated through the following example.

- (68) [TP Nèi cì jùhuì, [Tpián Mǎi, [AgrPñi [FP t_i dōu [ipméi_jyou [NegP t_j
 that CL reunion even Mary you FOC not-PER
 [v_prèrchūlai t_i]]]]]]
 recognize
 ‘As for the reunion, you did not even recognize **Mary**.’

The Chinese data presented in this paper and the analysis we have proposed also have a number of consequences for the current studies of the Focus Criterion. For instance, in the analysis of Modern Greek focus structures, Tsimpli 1992 argues for relaxing Clause A of the Focus Criterion. She claims that the primary function of Clause A is to motivate movement of the focus phrase to [Spec, FP] and in most cases, this movement is motivated independently for scope reasons, examples including English in-situ focus and wh-movement (see Chomsky 1986a and Culicover 1993 for discussion) as well as Modern Greek focus structures. Although this proposal may also seem to work with Chinese in-situ focus structures and wh-questions, other data presented in the paper seem to suggest otherwise. In Chinese formal focus structures, a focus phrase does not move to sentence-initial position to get wider scope. Instead, it only moves to a preverbal position. Thus we must assume that Clause A is needed (at least for Chinese type formal focus structures).

Second, in a discussion of Hungarian focus structure, Horvath 1991 suggests that the Focus Criterion may be replaced by [+FOC] assignment, along the lines of Case assignment. The Chinese data seem to show that [+FOC] feature is different from Case in at least two aspects. First, a single noun phrase may get both [+FOC] feature and (for instance, a nominative) Case. If [+FOC] behaves like Case, then we may have to revise the Case Theory to allow a single noun phrase to receive two Cases at the same time. This does not seem to be a theoretically sound proposal. Second, a Case position is regarded as the destination for NP movement. Once an NP gets Case, there is no reason for it to move again simply to get another Case.²⁶ This, however, is not true for Chinese focus phrases. We have seen instances where an object NP can move to [Spec, FP] although the object position is regarded as a typical Case position.

For languages like English, [Spec, CP] seems to host both wh-phrases and focus phrases (see Culicover 1993). Thus it is possible to collapse the Wh-Criterion with the Focus Criterion. However, Chinese formal focus structures seem to suggest that [+FOC] and [+WH] features need to be kept distinct if the two features do not have the same functional strength.

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²⁶ There do seem to be a few languages where an NP can have two case markers. The exact nature of how and why the NPs in these languages get more than two cases remain unexplained.

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